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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,645	04/16/2004	Chang Wei	040092-028700US	2291
31824	7590	12/04/2006	EXAMINER	
MCDERMOTT WILL & EMERY LLP 18191 VON KARMAN AVE. SUITE 500 IRVINE, CA 92612-7108			BLACKWELL, GWENDOLYN ANNETTE	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,645

Applicant(s)

WEI ET AL.

Examiner

Gwendolyn Blackwell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-13, 16-19 and 22-32 is/are pending in the application.
- 4a) Of the above claim(s) 25-30 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8, 10-13, 16-19 and 22-24 is/are allowed.
- 6) ☒ Claim(s) 31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 31 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. The inclusion of a reflective layer in the optical solar reflector is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant amended claim 31, drawn to an optical solar reflector, by removing the limitation that the reflector has a reflection layer and placed that limitation in new claim 32. How can a reflector be a reflector if there is no reflective layer present in the structure? By indicating in a dependent claim that the reflector further comprises a reflection layer, implies that the reflector of claim 31 does not need a reflective layer. Clarification is needed.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the inclusion of a reflective layer in the optical solar reflector claimed in claim 31. Applicant amended claim 31, drawn to an optical solar reflector, by removing the limitation that the reflector has a reflection layer and placed that limitation in new claim 32. How can a reflector be a reflector if there is no reflective layer present in the

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structure? By indicating in a dependent claim that the reflector further comprises a reflection layer, implies that the reflector of claim 31 does not need a reflective layer. Clarification is needed.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 6,587,263, Iacovangelo et al in view of United States Patent Application Publication no. 2003/0155632, Goldstein as applied to claim 16 above.

Regarding claims 31 and 32

Iacovangelo et al disclose an optical solar reflector comprised of substrate, a bond layer, a reflective layer, and a radiative layer, (column 2, lines 35-41). The radiative layer is comprised

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of silicon oxide, silicon nitride, or silicon oxynitride, (column 2, lines 42-51). Iacovangelo et al do not specifically disclose that the silicon oxynitride layer has a stress gradient.

Goldstein discloses a high reflector tunable stress coating used for a micro-electromechanical mirror, (page 1, section 0015). The stress coating is comprised of silicon oxynitride which varies from tensile stress to compressive stress at the surface of the coating, (page 2, sections 0022-0024).

Iacovangelo et al and Goldstein disclose inventions related to optical mirrors/reflectors. It would have been obvious to one skilled in the art at the time of invention to modify the silicon oxynitride coating of Iacovangelo et al with the stress tunable characteristics of the silicon oxynitride coating of Goldstein in order to minimize or control the stress in the surface coating, (Goldstein, page 1, section 0005). As the Goldstein silicon oxynitride coating has a stress gradient going from tensile to compressive at the surface, it would have been obvious to one skilled in the art at the time of invention to make separate layers of silicon oxynitride instead of having one integral silicon oxynitride layer as whether the silicon oxynitride layers are separate or integral the purpose going from tensile stress to compressive stress is to make a more stable surface film which will not place hardship on the substrate.

Response to Arguments

8. Applicant's arguments, see pages 9-12, filed September 11, 2006, with respect to claims 1-8, 10-13, 16-19, and 22-24 have been fully considered and are persuasive in light of the claim amendments. The previously made rejections and objections of claims 1-8, 10-13, 16-19, and 22-24 have been withdrawn.

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9. Applicant's arguments filed September 11, 2006 have been fully considered but they are not persuasive with respect to the 103 rejection of claim 31. New claim 32 has been added to the rejection.

10. Applicant contends (1) that US 2003/0155632 (Goldstein) and USPN 6,587,263 (Iacovangelo) are not analogous art, (2) that Goldstein does not teach or suggest a stress coating layer comprised of silicon oxynitride that varies from tensile stress to compressive stress, and (3) that Goldstein teaches away from the claimed invention.

With regards to the first contention, Iacovangelo and Goldstein are analogous art in that each is comprised of a substrate with a reflective coating formed thereon. Each has an outer surface coating comprised of silicon oxynitride. Iacovangelo is analogous art with the present invention as each teaches an optical solar reflector. Goldstein is used to demonstrate that it is known to adjust the stress in the outer surface coating in a fashion substantially similar to that claimed by Applicant in order to not have a negative effect on the underlying coatings, (Goldstein, page 2, sections 0027-0032).

With regards to the second contention, Goldstein teaches and suggest that by varying the amount of nitrogen in the silicon oxynitride coating between 60-20 percent, the coating stress can be varied between tensile and compressive stress, (page 2, section 0022). Applicant in referring to Figures 2-4 is looking at preferred embodiments. It has been well established that an Applicant's disclosure need not be replete with all preferred embodiments and that as such the disclosure is not limited to only those examples present therein. As such, while the aforementioned figures represent an overall compressive stress, overall tensile stress, and substantially no stress coatings, there is nothing in Goldstein to suggest that the coating is only limited to these three embodiments. Goldstein specifically teaches that the nitrogen present in

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the coating can be present from 60-20% (tensile -> compressive). Goldstein also teaches that other ratios are possible and that persons of ordinary skill in the art will recognize how to implement other stresses by varying the ratio of oxygen to nitrogen in the silicon oxynitride coating, (Goldstein, page 2, sections 0022-0025). Claim 10 (Goldstein, page 4) further supports this position, wherein the multiple reflective coating includes a stress tunable from tensile to compressive wherein the tunable layer is silicon oxynitride, (claim 11).

With regards to the third contention, it is unclear how Goldstein teaches away from having a particular shape if the stress is varied, as Applicant's Figure 8 demonstrates that having stress varied in a device still would allow a flat or bent device. In addition, Goldstein teaches that other shapes can be achieved by varying the nitrogen ratio in the silicon oxynitride coating, (Goldstein, page 2, section 0031).

For the reasons set forth above, the rejection of claim 31 is maintained. New claim 32 is added to the rejection.

Allowable Subject Matter

11. Claims 1-8, 10-13, 16-19, and 22-24 are allowed over the prior art of record.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn Blackwell whose telephone number is (571) 272-1533. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gwendolyn Blackwell
Examiner
Art Unit 1775



JENNIFER MCNEIL
SUPERVISORY PATENT EXAMINER
11/24/06